

CLAIMS

What is claimed is:

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1. A method of identifying an agent which modulates the activity of a target molecule, wherein said target molecule effects cellular propagation, said method comprising the steps of:

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- (a) contacting a cell with a candidate compound, wherein said cell comprises said target molecule, and wherein said cell further comprises a reporter gene;
- (b) measuring cell propagation; and
- (c) measuring activity of said reporter gene.

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2. The method of Claim 1, wherein said target molecule effects the activity of said reporter gene.

3. The method of Claim 1, wherein said target molecule is a heterologous molecule.

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4. The method of Claim 3, wherein said heterologous target molecule is selected from the group consisting of: an oligonucleotides, a polynucleotide, a nucleic acid, a polypeptide, a protein, and a protein fragment.

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5. The method of Claim 1, wherein said reporter gene produces a reporter enzyme whose activity is detectable on the basis of conversion of a substrate.

6. The method of Claim 5, further comprising the step of adding said substrate with a delay after said contacting step (a).

7. The method of Claim 6, wherein said delay comprises the duration of at least one reproductive cycle of said cell.
- 5 8. The method of Claim 7, wherein said delay comprises the duration of at least two reproductive cycles of said cell.
9. The method of Claim 7, wherein said delay comprises the duration of no more than twenty-four reproductive cycles of said cell.
- 10 10. The method of Claim 5, wherein said reporter gene activity measuring step (c) comprises the step of disrupting said cell.
11. The method of Claim 10 wherein said disrupting step comprises the steps of:
15 (i) adding said substrate; and
(ii) adding a substance selected from the group consisting of: a substance capable of permeabilizing the membrane of said cell, and a substance capable of destroying the membrane of said cell.
12. The method of Claim 1, wherein said target molecule effects cellular propagation
20 directly.
13. The method of Claim 1, wherein said target molecule effects cellular propagation indirectly.
- 25 14. The method of Claim 13, wherein said target molecule effects cellular propagation by interposition of an intermediary molecule, wherein said intermediary molecule directly effects cellular propagation.
15. The method of Claim 14, wherein said intermediary molecule is a chimeric
30 molecule.

16. The method of Claim 1, wherein said cell is a yeast cell.
17. The method of Claim 16, wherein said yeast cell is a *S. cerevisiae* cell.
- 5 18. A method of identifying an agent which modulates the activity of at least one target molecule, wherein said at least one target molecule effects cellular propagation, said method comprising the steps of:
- 10 (a) contacting a first cell with a candidate compound, wherein said first cell comprises a first target molecule, and wherein said cell further comprises a reporter gene;
- (b) contacting a second cell with a candidate compound, wherein said second cell comprises a second target molecule, and wherein said cell further comprises said reporter gene;
- 15 (c) measuring cell propagation of said first cell;
- (d) measuring cell propagation of said second cell;
- (e) measuring activity of said reporter gene in said first cell; and
- (f) measuring activity of said reporter gene in said second cell.